RUHS

First Year MBBS Examination

I MBBS BIOCHEMISTRY PAPER I

Time: 3 hours

Max Marks: 100

Date: 19-01-2022

Instructions: INSTRUCTIONS: Attempt all questions in both sections: (Use separate answer book for each section)

Section 1

1. Fill in the blanks: (6)
   a. The cyanide inhibits electron transport chain enzyme _____
   b. Thiamine level is best monitored in blood by level of enzyme _____
   c. The group of proteins assisting in folding of other proteins are _____
   d. The most important source of reducing equivalents for fatty acid synthesis in the liver is _____
   e. The zinc containing protein in the saliva involved in taste sensation is _____
   f. The deficient enzyme in Phenylketonuria is _____
2. Choose the correct option in the following multiple choice questions: (4)
   a. Congenital erythropoietic Porphyria has all the

features, except:

a. Sensitivity to sun light
b. Reddish discoloration of urine
c. Erythrocyte porphyrin level elevated
d. Inherited as Autosomal recessive trait

b. A lipoprotein inversely related to the incidence of coronary arthrosclerosis is:

a. VLDL
b. IDL
c. LDL
d. HDL

c. The most active form of vitamin D is:

a. 25-Hydroxycholecalciferol
b. 1,25 Dihydroxycholecalciferol
c. 25-Dihydroxyergocalciferol
d. None

d. Anion gap is normal in:

a. Hyperchloremic metabolic acidosis
b. Diabetic ketoacidosis
c. Lactic acidosis
d. Uremic acidosis

3. A 55 year old man complained severe pain in the joints. He has a non-vegetarian and consumed alcohol occasionally. On examination I st metatarsophalangeal joint (15) was red and swollen. The significant finding of blood investigation was uric acid = 12 mg/dl. X-ray of foot did not show any bony of soft tissue anomaly.

a. What is the probable diagnosis and suggest its cause?
b. What can be the enzyme defect in this disease?

c. Which investigation is to be performed for confirmation of diagnosis?
d. What are the risk factors for this diseases?
e. What is the treatment?

4. Write short notes on (Any five): (10)
   a. Regulation of glycogenesis.
   b. Lipotropic Factors
   c. Vitamin E as an antioxidant.
   d. Wilson's diseases.
   e. Metabolic alkalosis.
   f. Essential fatty acids.
5. Explain briefly (Any three); (15)
   a. Phenylketonuria
   b. Diagnostic use of isoenzymes.
   c. Electron transport chain and its inhibitors.

Section 2

1. Describe Ketogenesis and its regulation. What are the salient features of ketosis? Explain metabolism of ketone bodies in starvation and uncontrolled diabetes (20) mellitus.
2. Explain why (Any five): (10)
   a. Person suffering from diabetes mellitus is more prone to develop cataract.
   b. Bleeding gum is seen in scurvy.
   c. HDL is considered as a good cholesterol.
   d. Mental retardation is seen in phenylketonurics.
   e. Amino acids are amphoteric in nature.
   f. Fluoride prevents the development of dental caries.
3. Explain briefly (Any four): (20)

a. Glycogen storage diseases.
b. Role of folic acid in one-carbon metabolism.
c. Arterial blood gas (ABG) analyzer.
d. Transamination
e. Homeostasis of calcium.

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